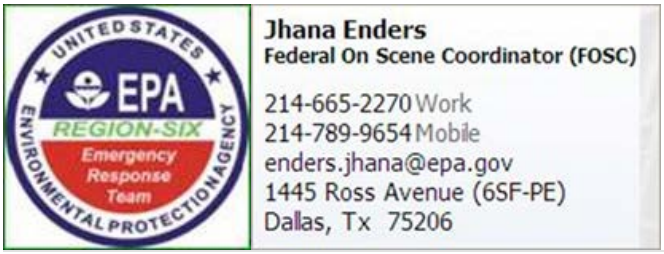
From:	Enders, Jhana
To:	Turner, Philip
Subject:	FW: Amarillo Phosphine - Laboratory Questions
Date:	Tuesday, February 28, 2017 5:45:46 PM
Attachments:	removed.txt ALS Uncertainty Phosphine OSHA-1003-MOD 2-23-17.pdf image002.png image003.png

FYI…are you around tomorrow to talk a little more about this response and the other one from the lab? Thanks.



From: Ojeda, Jose [mailto:Jose.Ojeda@WestonSolutions.com]
Sent: Thursday, February 23, 2017 11:17 AM
To: Enders, Jhana
Subject: RE: Amarillo Phosphine - Laboratory Questions

1) What is the lab's 'historical experience?" Have they done one, twenty, hundreds?...additional info needed to evaluate this response better.

Our QA manager reviews the data trends for each method annually based on QC recoveries. The current limits are based on our historical QC data trends since 2015 to present which in compasses 15 batches or 200 samples. Attached a summary provided by our QA manager showing the calculated uncertainty for the OSHA 1003 method performed by our laboratory.

2) Please explain a bit more about the process of 'field blank correct the samples.'

If a client submits a field blank which contain measurable contamination for the analyte of interest. The case can be made that the active field samples can be subtracted by the amount found in the field blank to correct for any interferences or media back ground contamination. Our laboratory runs a Laboratory Media Blank (LMB) standard along with spiked quality control samples from the same lot. Our practice to correct for media background contamination is to subtract the amount of the contaminant found in our LMB from our internal Quality control spiked media. However, it is not our laboratories standard practice to make the same correction to the client's field samples. Two reason for this practice:

a) ***Laboratory cannot guarantee that the client submitted media from the same lot used by the laboratories QC spikes.***

b) ***We prefer that the client have control on how to interpret their data based on how their field quality control sample perform***

José L. Ojeda
Senior Project Leader – START
Weston Solutions, Inc.

From: Enders, Jhana [mailto:Enders.Jhana@epa.gov]
Sent: Wednesday, February 22, 2017 11:21 AM
To: Ojeda, Jose <Jose.Ojeda@WestonSolutions.com>
Subject: RE: Amarillo Phosphine - Laboratory Questions

Jose,

Please follow up;

1) What is the lab's 'historical experience?" Have they done one, twenty, hundreds?...additional info needed to evaluate this response better.
2) Please explain a bit more about the process of 'field blank correct the samples.'

Thanks

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From: Ojeda, Jose [mailto:Jose.Ojeda@WestonSolutions.com]
Sent: Wednesday, February 22, 2017 8:21 AM
To: Ruhl, Christopher <Ruhl.Christopher@epa.gov>; Enders, Jhana <Enders.Jhana@epa.gov>
Subject: Amarillo Phosphine - Laboratory Questions

Chris,

Below are the laboratory's response (**bold blue**) to the questions from yesterday's conference call:

1) Our client is concerned that the method detection limit of 13 µg/m^3 listed on page 4 of 15 under section 1.2.2 was not achieved. Would it be possible for you to report the results to include your Method Detection Limit (MDL) not just the Report Limit (RL)?

    a. ***Unfortunately, we do not have the option to report lower than our current Reporting Limit for OSHA 1003 method. The current reporting limit has been established based on historical experience with this method and media background interferences.***

2) Please provide a detailed explanation of why phosphorus was detected above the RL in the Laboratory Media Blank (LMB) at 6.15 µg/sample? The phosphorous concentration present in the LMB is very similar to detections in the samples thus making the validity of the data questionable.

    a. ***On occasion, we do see background contamination on the media which can vary from lot to lot. I believe we sent the media for the project and also used the same media lot for the quality control. Assuming your sample PH3-FB-28012017-85 filter came from the same lot as the one used by our laboratory, the levels found are in line with our laboratory LMB result. If needed, we can field blank correct the samples.***

3) If the site was re-sampled what are the chances that the Laboratory Reagent Blank (LRB) and/or LMB would again show phosphorus contamination?

    a. ***The reagent blank was non-detect down to our reporting limit. I would not expect this outcome to be any different on the next round of samples. However, depending on the lot used for the treated media (LMB and QC), there exist the possibility that there may be some inherent contamination from lot to lot.***

4) Would it be possible to lower the MDL and/or RL by increasing the sample volume above the 240L and/or training filters?

   a. ***The only variable available to adjust is the collection volume. The OSHA 1003 method recommends a maximum collection volume of 240 L. Based on the recipe provide within the method, I calculated a theoretical maximum loading of 4 mg/sample of phosphine that can be collected on the treated media. Meaning, based on the levels reported, there appears to be room to extend the collection volume beyond the 240 L recommended maximum. I would strongly recommend someone double check my calculation based on the follow parameters:***

A solution of 4.0 g of mercuric chloride and a small amount of methyl orange in 40.0 mL of 95:5 (v/v) methanol/glycerol was prepared. Caution: Mercuric chloride is a poison and slightly volatile at ordinary temperature. Forty cleaned filters were placed on a clean glass plate and, using an Eppendorf pipet with a plastic tip, 0.95 mL of the mercuric chloride solution was applied to each filter. $PH_3 + 3HgCl_2 \rightarrow P(HgCl)_3 + 3HCl$

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********** ATTACHMENT REMOVED
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